PRS33

EFFECTS OF EDUCATIONAL INTERVENTIONS FOR SELF-MANAGEMENT OF ASTHMA IN CHILDREN AND ADOLESCENTS: AN UPDATED SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS

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OBJECTIVES: To update a previously published systematic literature review and meta-analysis investigating the effectiveness of asthma self-management education programs on health outcomes in children. **METHODS:** The updated search is through June 2010 and included published meta-analysis or journals from MEDLINE, EMBASE, and the Cochrane Central Register of Controlled Trials. All available English abstracts were reviewed and the full text was consulted as necessary to clarify eligibility status. Eligible studies were randomized controlled trials or controlled clinical trials that evaluated outcomes in children ages 2-18 years with a diagnosis of asthma. Data were extracted on the study population, intervention types, sample size, sample size calculations, loss to follow-up, outcomes, and methodological quality of the studies. Data were pooled using both fixed effects and random effects models. Effect estimates were plotted in forest plots and heterogeneity was assessed visually and statistically using the I^2 statistic. All data were analyzed using RevMan software. **RESULTS:** Preliminary results with the addition of several recent studies suggested that educational programs for the self-management of asthma in children were associated with modest to moderate improvement in several outcome measures, such as the mean number of emergency department visits (n = 17 studies; SMD: −0.67; 95% CIs: −1.23, −0.11; I^2 = 97%) and mean number of hospitalizations (n= 11 studies; SMD: −0.50; 95% CIs: −0.70, −0.29; I^2 = 62%). The results for random effects models were similar to fixed effects models. **CONCLUSIONS:** Incorporating educational programs for self-management into the routine care of children and adolescents with asthma may significantly improve outcomes. This update will improve the power of small or inconclusive studies, allowing for analysis of subgroup effects and the comparative effectiveness of alternative strategies. Results are preliminary and a full update of the meta-analysis is forthcoming.

PRS34

PATIENT SELF-MANAGEMENT OF ASTHMA: A STUDY IN AN EMERGENCY ROOM OF A CHEST HOSPITAL IN DELHI, INDIA

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OBJECTIVES: Asthma, a chronic disease requires lifelong adherence to medication and optimal self-management. Studies indicate that worldwide self-management of asthma is poor and evidence-based suitable interventions are needed for asthma control. The present study was conducted to investigate the pattern of self-management in asthmatic patients in Delhi, India. **METHODS:** Adult asthma patients (n=200) visiting emergency room (December 2008-December 2009) of a tertiary care referral chest hospital for asthma exacerbation completed self-report questionnaire on self-management of asthma after stabilization. Written informed consent from patients and ethical clearance from institute was obtained. Questionnaire contained 51 questions having six domains: Socio-demographic profile, clinical profile, morbidity and activities of living, access to care, asthma attack prevention and emergency actions. **RESULTS:** Study population had 64% female, 51.5% between 30-40 year and 10% were illiterate. Patients were enrolled as asthma outpatients in the study hospital for 5.4±4.4 years. All patients except one were prescribed corticosteroid+beta2 agonist inhalers. Patients visiting ER and having unscheduled visit to doctor at least twice in the previous 12 months were 86.5% and 91% respectively. Patients were classified according to the disease severity as having intermittent (17%) or persistent (83%) asthma. Majority of patients visited the study hospital for usual source of treatment and in case of exacerbation. Not all patients had meter dose inhalers at home. Only 2% patients were prescribed peak flow meter and one patient reported using it regularly and keeping diary. No statistical difference was found in pattern of self-management by patients having persistent or intermittent asthma. Except one, no patient had any written action plan for treatment or for emergency. **CONCLUSIONS:** Findings revealed poor self-management of asthma and lack of communication between doctor and patient. Immediate action is needed to impart knowledge of self-management and written action plan for asthma patients by physicians.

PRS35

PHARMACY QUALITY INDICATORS USING MISSISSIPPI MEDICAID: TESTING PQA-ENDORSED STARTER SET MEASURES AND 2010 TEST MEASURES

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OBJECTIVES: (1) To understand how multiple pharmacy use affects the ability to compute pharmacy quality indicators (PQIs). (2) To determine the number of pharmacies that have sufficient Medicaid claims to compute PQIs. **METHODS:** An observational cohort study of Mississippi Medicaid data for 2002 and 2004 was conducted. Patients with medication claims related to each measure, continuously enrolled, and without institutional care during the measurement year were eligible. The PQIs in the Pharmacy Quality Alliance '(PQA)-endorsed starter set' were computed at the patient level and aggregated to the pharmacy level by attributing each beneficiary to the pharmacy that dispensed the most (and alternative criteria of 50% and 75%) of their drugs for the measure. Pharmacies with at least 30 eligible members per measure were considered reliable. Additionally, the 2010 PQA test measures (adherence to anticonvulsants and antiretrovirals, statin use with CAD, asthma management) were evaluated. **RESULTS:** The majority of patients (three-fourths) obtained over 90% of their diabetes and cardiovascular medications from one pharmacy. Around 85% and 97% of the patients obtained over 75% and over 50% of their medications from a single pharmacy respectively. Only 55% of patients received antiretroviral medications from a single pharmacy. For the adherence/persistence measures, 6.3% to 65.3% of the pharmacies had reliable measures in 2002. 78.2% of the pharmacies could be included for the high-risk medications in elderly measure and 2.7% of the pharmacies qualified for the CAD measure. Less than 10 pharmacies qualified for the asthma management and antiretroviral medication adherence measures. A similar pattern was observed in 2004. **CONCLUSIONS:** The attribution strategy proposed by PQA can be made more stringent without severely limiting the number of pharmacies with measures. Using a pharmacy attribution criteria of 50%+ or 75%+ of fills from the same pharmacy will result in more reliable PQI metrics.

PRS36

HOSPITALIZATIONS, MEDICAL MANAGEMENT AND SWITCH THERAPY PATTERNS IN THE COPD MEDICARE POPULATION

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OBJECTIVES: To evaluate whether hospitalization rates differ between COPD patients who switched therapy and/or have better medical management in the Medicare population. **METHODS:** This is a cross-sectional retrospective study of COPD Medicare patients between January 2006 and December 2008. Eligible patients had at least one claim for COPD in 2006 as 1st diagnosis and were also continuously eligible for parts A, B and D during the study period. Patients enrolled in Medicare Advantage, diagnosed with asthma and younger than 65 years old were excluded. Therapy switch was defined as patient switching all drugs taken in the previous year. Probability of hospitalization was estimated using a logit model with regressors of age, gender, race, previous hospitalization, previous therapy, previous COPD test, physician visits and comorbidities. **RESULTS:** A total of 44,933 patients were included in the study. The average age was 77.8 years old. A majority of the patients were female (64.1%), and white (89.8%). Congestive heart failure, diabetes and hyperlipidemia were the most common comorbidities. The most frequently prescribed therapy was oxygen (around 30%), followed by Short-Acting Beta Agonists (14%). Patients who received greater COPD medical management as defined as COPD therapy (including higher OCS use), number spirometry tests and physician visits for COPD were associated with decreased likelihood of hospitalization in 2008 (p-value < 0.05). Moreover, therapy discontinuation, new therapy starters, weight loss, hyperlipidemia, liver disease, coagulapathy and renal failure were associated with higher COPD hospitalization risk while depression, congestive heart failure with lower hospitalization risk (p-values < 0.05). Also, in this population around 21% visited a specialist physician, 14% had ER visit and 20% were hospitalized for COPD in 06, 07, 08. **CONCLUSIONS:** The findings suggest that patients maintaining the same therapy across years and patients with greater COPD medical management are less likely to be hospitalized compared to patients with worse disease control.

PRS37

THE PRICE NEGOTIATION ON PHARMACEUTICALS AFTER THE INTRODUCTION OF POSITIVE LIST SYSTEM IN SOUTH KOREA

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OBJECTIVES: In Korea, the price of new drug has been decided through price negotiation after evaluation for reimbursement in decision process since 2007. The price of new drug was negotiated considering price of reference drugs, budget impact analysis, substitution rate, etc. This study attempted to analyze states of new drugs' listing and identify influential factor in reimbursement and pricing negotiation, and to analyze satisfaction of pharmaceutical companies concerned on price negotiation. **METHODS:** Data on reimbursement for 3 years (2007.01.01-2009.12.31) were obtained from the agency's website posting results for reimbursement determination, and Korean Ministry of Health and Welfare Affairs' drug notification on the results of price negotiation. The questionnaire consisting of negotiation guideline (article 10, 11) and satisfaction was made and used to collect responses of pharmaceutical companies' working group. The e-mail for the survey was sent out to 31 companies, survey response rate was 71%. **RESULTS:** Cost-effectiveness (84.5%) was affecting factor of reimbursement in decision process. The lead time of reimbursement and pricing was around 12.8months. The listing price was determined as average 67% compared to application price, application price was cut by approximately 20% in decision-making of reimbursement, after that, that price was cut by approximately 17% in price negotiation process. In negotiation process, the price of reference drugs had great influence on results of negotiation. Mainly the lowest price in therapeutic area was referenced in negotiation process. Negative perceptions on process of pricing negotiation were found especially predictability of price and appreciating its value, and the needs for detailed guideline have been mentioned. **CONCLUSIONS:** The satisfaction of negotiation process was very negative, the reason was that Positive list system made new drugs' listing more difficult and lengthened the lead time of listing. To enhance the negotiation process, it is necessary to develop the detailed guideline on process of price negotiation.

PRS38

EFFECT OF HAVING A PRESCRIPTION DRUG PLAN ON ASTHMA PATIENTS' USE OF CONTROLLER MEDICATIONS

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OBJECTIVES: To determine the effect of enrollment in a prescription drug plan on use of controller medications in patients with persistent asthma. **METHODS:** The study used a retrospective, cross sectional research design. The data source utilized was the 2008 Medical Expenditure Panel Survey (MEPS), a nationally representative sample of the non-institutionalized, civilian U.S. population. Analysis was restricted to asthma patients who reported use of more than 3 canisters of rescue inhalers in a three-month period. Controller medication use was self-reported by MEPS respondants. Descriptive statistics was used to describe the sample and their controller medication use. A logistic regression model was used to assess the effect of prescription drug coverage based on the type of prescription drug plan on the controller medication use while adjusting for age, gender, race, ethnicity, income and perceived health status. All analyses were carried out using SASv.9.1. **RESULTS:** Forty-two percent of respondents had prescription drug coverage while 67% reported use of controller medications. In the regression model, controller medication use was found to be similar amongst patients with prescription drug coverage and patients without coverage (68%, 66%, respectively). Patients with prescription drug coverage were less likely to use controller medications than those who did not have coverage, although this effect was not significant (OR = 0.53,CI:0.28-1.01). Patients with Medicare (OR = 4.35, CI:1.61-11.75), Medicaid (OR = 5.44, CI:2.23-13.24) or Veterans Affairs (OR = 12.82, CI:3.21-51.16) prescription coverage were more likely to use controller medications when compared with patients in other types of plans. Both pediatric patients (OR = 5.51, CI:1.27-23.88) and patients with excellent perceived health status (OR = 5.10, CI:2.04-12.76) had a higher likelihood of using controller medications. **CONCLUSIONS:** Enrollment in a prescription drug plan did not show a significant impact on use of controller medications. However, enrollment in Medicare, Medicaid or Veterans Affairs prescription plans increased likelihood of controller medication use in this patient cohort.

PRS39

EFFECT OF BIOMASS SMOKE ON CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN RURAL LOCALITIES OF COLOMBIA

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OBJECTIVES: The exposure to biofuel smoke is a risk factor for Chronic Obstructive Pulmonary Disease –COPD- while using natural gas may be protective against it. There is few evidence from Latin America on the relationship between use of different types of fuels to cook and respiratory diseases. The present report is aimed to assess differences in the prevalence of abnormalities to respiratory functions between populations who used biomass fuel to cook against those using cleaner sources of energy such as natural gas. **METHODS:** A cross-sectional population based study was designed to evaluate the respiratory function, through spirometry, in subjects cooking with biomass or natural gas. All patients were evaluated by a general physician and a pulmonologist. We compared the prevalence of spirometry abnormalities on those cooking with natural gas versus those cooking with biomass fuel. A multivariable logistic regression was used to adjust differences by potential confounding factors. **RESULTS:** Overall 203 persons were studied. After adjusting by potential confounders there were a significant increase in the prevalence of severe obstructive pattern (OR 5.50; 95% CI 1.17-25.79) in subjects who cook with biomass compared with natural gas users. Values of Forced Expired Volume in one second (FEV1) and forced vital capacity (FVC) were lower among those cooking with biomass. The differences in prevalence of respiratory morbidity and symptoms were not statistically significant between both groups. **CONCLUSIONS:** These findings suggest that replacing biomass fuel by natural gas may be an important public health intervention in Colombia because it can reduce the prevalence of abnormal patterns of pulmonary function.

PRS40

TRENDS IN ANTIBIOTIC PRESCRIBING RATES IN AMBULATORY CARE SETTINGS FOR ADULTS IN THE UNITED STATES WITH NASOPHARYNGITIS, UPPER RESPIRATORY TRACT INFECTIONS AND BRONCHITIS FROM 2006 TO 2008

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OBJECTIVES: The 2006 guidelines of the American Academy of Family Physicians recommends to avoid prescribing of antibiotics to patients diagnosed with nasopharyngitis, acute upper respiratory tract infections (ARTI) or acute bronchitis. Inappropriate prescribing of antibiotics to patients can lead to a rise in antibiotic-resistant bacteria and subsequently increase the economic burden. The purpose of this study was to determine the trends in the antibiotic prescribing rates for adults diagnosed with nasopharyngitis, acute bronchitis or ARTIs in ambulatory care settings in the United States after the 2006 guidelines. **METHODS:** This was a retrospective, cross-sectional analysis of the representative national survey of office visits from the National Ambulatory Medical Care Survey for the years 2006 to 2008. Adults≥18 years of age with a diagnosis of nasopharyngitis, ARTIs, or acute bronchitis were identified using *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM) codes. Inappropriate antibiotic prescribing rates for the three conditions were calculated separately and collectively. Descriptive analysis was conducted to determine the utilization patterns by patient and physician characteristics. Logistic regression was carried out to determine the trends in the antibiotic utilization. **RESULTS:** Analysis of multiyear data showed no statistically significant trend (p-value = 0.4622) in the antibiotic prescribing rates from 2006 to 2008. Approximately, 45.26 million office visits annually resulted in a primary diagnosis of nasopharyngitis, acute URI, or acute bronchitis; of these visits, 1.5%, 44%, and 61%, respectively, resulted in the prescribing of an antibiotic. Overall 47.26 % of the study population was prescribed antibiotics. **CONCLUSIONS:** Antibiotic prescription rate did not change significantly from 2006 to 2008. Antibiotics were prescribed inappropriately in 47% of the adults diagnosed with nasopharyngitis, ARTI, or acute bronchitis. Concerted efforts are needed to improve antibiotic prescribing practices for these conditions.

PRS41

A REAL-WORLD EVALUATION OF BETA AGONIST USE DURING HOSPITALIZATIONS FOR COPD

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OBJECTIVES: Chronic Obstructive Pulmonary Disease (COPD) is a major public health issue and is a leading cause of morbidity and mortality in the United States[1]. High frequency of exacerbations can lead to the further decline in lung function in patients with moderate to severe COPD[2]. The objectives of this study was to gain a better understanding of short-acting and long-acting beta-agonist use (SABA and LABA, respectively) in the inpatient setting and describe beta-agonist effects on total cost and length of stay (LOS). **METHODS:** Data from the Premier Perspective™ Database, a US national representative hospital database, was used to identify the study population, which included adults 40 and older with an inpatient visit having a principal discharge diagnosis code of COPD (ICD-9-CM 491.xx, 492.xx, 496) between January 1, 2006 and March 31, 2010. **RESULTS:** There were 165,055 individuals with a primary diagnosis code during an inpatient visit. The mean age for SABA only users was 68.9 years and 67.7 years for LABA only users ($p < 0.0001$). The majority of the patients were female (56.9% SABA only, 56.9% LABA only, $p = 0.9988$) and white (72.3% SABA only, 66.4% LABA only, $p < 0.0001$). The unadjusted mean total cost for LABA users was $5,727 compared to $7,084 for SABA ($p < 0.0001$). LOS was not different between LABA and SABA users: mean 5.5 and 6.7 ($p = 0.4786$). Inpatient mortality for both beta-agonist user groups was below two percent (1.50% SABA versus 0.34% LABA, $p = 0.0001$). **CONCLUSIONS:** Descriptive analyses indicate there are some differences among individuals with COPD using only LABA use compared to SABA only use during an inpatient visit. Modeling outcomes adjusting for potential differences such as demographics and concomitant drug use will be performed to further describe this population.

PRS42

CONCOMITANT ASTHMA MEDICATION USE IN PATIENTS USING OMALIZUMAB: RESULTS FROM THREE LARGE INSURANCE CLAIMS DATABASES

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OBJECTIVES: This study describes concomitant asthma medication use in patients treated with omalizumab (Xolair®), a monoclonal antibody indicated for moderate to severe persistent allergic asthma. **METHODS:** An analysis of health insurance claims from three large databases was conducted: MarketScan (1996-2009), Medicaid (1997-2009), and Wellpoint (2002-2010). Patients ≥12 years old newly initiated on omalizumab with 12 months of continuous insurance coverage prior to the first omalizumab dispensing (baseline period) and ≥2 asthma claims were included. Concomitant asthma medication use was summarized in eight medication classes: ICS, LABA, leukotriene modifiers, mast cell stabilizers, anticholinergics, SABA, methylxanthines, and oral corticosteroids, according to the 2007 National Asthma Education and Prevention Program guidelines for managing asthma. **RESULTS:** A total 6,038 patients were identified (Medicaid: 731; MarketScan: 3,521; Wellpoint: 1,786). Mean age (SD) was 38.8 (12.6), 44.6 (14.0), and 47.3 (15.6), and males represented 31%, 36%, and 39% in Medicaid, MarketScan, and Wellpoint, respectively. A high proportion of new omalizumab users have had an asthma-related ER visit (Medicaid: 34%; MarketScan: 17%; Wellpoint: 16%) or hospitalization (Medicaid: 36%; MarketScan: 14%; Wellpoint: 21%) prior to initiating omalizumab. The majority of patients (Medicaid: 96%; MarketScan: 89%; Wellpoint: 86%) received three concomitant asthma medication classes or more during the baseline period. Concomitant ICS use was observed in 95%, 89%, and 86% of Medicaid, MarketScan, and Wellpoint patients, respectively. Only 1% of omalizumab users in Medicaid and 3% in MarketScan and Wellpoint received no other asthma medication prior to initiating omalizumab. **CONCLUSIONS:** Based on this large observational study using health insurance claims from three databases, a minority (1-3%) of omalizumab users receive monotherapy treatment for asthma.

Respiratory-Related Disorders – Research on Methods

PRS43

REGRESSION VERSUS PROPENSITY MATCHING AS OUTCOME ANALYSIS ADJUSTMENT METHODS: EXAMPLE USING COPD INITIAL THERAPIES

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OBJECTIVES: Compare retrospective initial maintenance treatment (IMT) analyses results from propensity matched (PM) comparisons to multiple regression (MR) results (adjusted for treatment, demographics and pre-initiation comorbidities and utilization). The MR and PM methods are two widely used methods in observational comparative outcome studies of pharmaceutical treatments to adjust for baseline differences in non-randomized treatment populations, but research on the extent to which study findings may differ between the methods is sparse. **METHODS:** One year post-initiation cost differences and utilization outcomes (odds ratios (OR)/incidence rate ratios (IRR) for emergency department visit (ED), hospitalization, or combination of either ED or hospitalization) for subjects diagnosed with chronic obstructive pulmonary disease (COPD) were reviewed using data (January 2004